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ABSTRACT

This study investigated home school graduates' potential for success in college by comparing their performance with that of students who had graduated from conventional public and private schools. The basis for comparison was student aptitude for college English as measured by the American College Testing (ACT) English sub-score and the ACT composite score and achievement in college English as measured by scores on tests, quizzes, and a library research paper. The subjects were 180 first-time freshmen students attending a large liberal arts Christian university. The subjects were divided into 3 groups: 60 home school graduates, 60 public school graduates, and 60 conventional private school graduates. Results indicated that the only significant difference among the student groups was found in the ACT English sub-test scores with the home schooled students scoring significantly higher than the conventional private school graduates. Overall the study suggested that the home schooled students in this study demonstrated similar academic preparedness for college and similar academic achievement in college as students who had attended conventional schools. (Contains 41 references.) (JB)

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Home Schooled Adults: Are They Ready for College?

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Abstract

Although the current research on the burgeoning movement in home education has investigated many important features of this controversial educational alternative, very little has been done to study the end result of home education--the adult who has graduated from the home school. Although evidence shows that many who are home schooled go on to attend college, little is known about their comparative success in that endeavor.

Because the skills necessary to succeed in college English courses are representative of the skills necessary to succeed in most college-level courses, freshman English is a logical focus for a study of the potential home schooled students have to succeed in college. This study investigated the home school graduate's potential for success in college by comparing his performance with that of students who had graduated from conventional schools--specifically, conventional private schools and public schools. The basis for comparison was their aptitude for college English (as measured by the ACT English subscore and the ACT composite score) and achievement in college English (as measured by scores on tests, quizzes, and a library research paper). The subjects for this study consisted of 180 first-time freshman students from a large liberal arts Christian university in the Southeast. The subjects were divided into three groups: (a) home school graduates (N=60), (b) public school graduates (N=60), and (c) conventional private school graduates (N=60).

The dependent variables for this study were organized into three groups to reflect the students' aptitude for and achievement in a college-level English course. The ACT English subtest and ACT composite test scores reflect aptitude for college-level English; the library research paper scores and test and quiz scores measuring comprehension of writing principles reflect achievement in the composition aspect of a college-level English course; and the test and quiz scores measuring vocabulary skills and grammar skills reflect the command of English usage necessary for success in college-level English courses. The data were analyzed by multivariate analysis of variance tests (MANOVA) and, when needed, univariate statistics and Tukey HSD Multiple Comparisons.

The only significant difference among the groups of students was found in the ACT English subtest scores with the home schooled students scoring significantly higher than the conventional private school graduates. Therefore, this investigation concludes that the home schooled students in this study demonstrate similar academic preparedness for college and similar academic achievement in college as students who had attended conventional schools.

Home Schooled Adults: Are They Ready for College?

Research in the field of home education has logically focused on the academic achievement of students who have been home schooled, usually comparing their performance on standardized tests to the national norms. These studies consistently report findings that demonstrate that home schooled students perform as well as, if not better than, their conventionally schooled counterparts (Maarse Delahooke, 1986; McAvoy, 1986; Lines, 1987; Schmidt, 1989; Wartes, 1990; Ray, 1990, 1992, 1993).

However, the measure of the success or failure of the home school movement lies in the success or failure of the adults who have been home schooled. What happens to these children who complete their education in a home school setting? Do they go on to lead productive lives? Do they get jobs? Do they go to college? Toch (1991) reports that indeed an "estimated 50 percent of home-schooled students attend college, about the same rate as their public-school counterparts" (p. 74).

Yet, it is success in, not just admission to, college that indicates the adequacy of academic preparation for that endeavor. Therefore, a two-fold question becomes relevant to the analysis of the success of home education: (a) do the home schooled students who desire a college education succeed in college; and (b) what is the extent of their success compared to college students from conventional educational settings?

Obviously, success in college can be measured by completion of a college degree program. Yet, it is a fact that not all students who enroll as freshmen in college will ultimately graduate. Pantages and Creedon (1978) found that only 7 out of 10 students who enter college will ever obtain a college degree. Although there are undoubtedly many reasons that students drop out of college, research has shown that aptitude for college-level study and academic achievement in college courses play a significant role (Pantages and Creedon, 1978; Nelson, 1985; Hudson, 1989). Research also shows that academic achievement in college is closely aligned with the mastery of certain academic skills: namely, reading, writing, and thinking skills (Wood, 1988; Adelman and Reuben, 1984; Bauer, 1987; Raburn and VanSchuyver, 1984; Kallingal, 1989; Pascarella, 1987). And the one college course that seems to focus on the development of all three of these skills is freshman English. Typically, a freshman-level college English course emphasizes both reading and cognitive skills in the development of effective writing ability. Lazere (1982) explains this close relationship between English courses and the rest of the college curricula: "the process of writing . . . [is] not an isolated end in itself but [it is] a means of assimilating knowledge and analytic skills that are integral to . . . other studies and general intellectual growth" (pp. 3-4).

Because the skills necessary to succeed in a college English course are representative of the skills necessary to succeed in

most other college-level courses, freshman English is a logical focus for a study of home schooled students' potential to succeed in college. Therefore, this study was designed to investigate the home school graduate's potential for success in college by comparing his performance with that of students who have graduated from conventional schools--specifically, conventional private schools and public schools. The basis for comparison was their aptitude for and achievement in a college-level English course.

Review of the Literature

Research investigating the success of home education has emphasized academic achievement on both the elementary and secondary levels. The following studies show that home schooled students from all regions of the country perform consistently above national norms.

Greene (1984) conducted a study in Alaska that compared the scores on standardized achievement tests by 193 home schooled students in grades 1 through 8 with the academic performances of their public schooled counterparts. In this case, the home schooled students "consistently outperformed" the other students in all the academic subtests (p. 18). Rakestraw (1987) conducted a study in Alabama that produced similar results. The 84 home schooled, elementary-aged students in this study performed above national norm levels on all the standardized achievement tests. Frost (1987) conducted a study in Illinois that reported the scores of 74 home schooled students of elementary age and found

that they scored higher than the national norms in all subtests of a nationally recognized standard achievement test. Tipton (1990) investigated the success of 81 home schooled children in West Virginia and found that they consistently performed significantly higher than their public school counterparts in vocabulary, reading comprehension, mathematics concepts, science, and total language means.

Wartes (1990) summarized the results of four years of home school testing in Washington state. The results based on 2,911 sets of test scores showed that in each of the four years of testing the median score of home schooled students fell well above the national norm. Richman, Girten, and Snyder (1990) replicated Wartes' study in Pennsylvania. The 171 home schooled students who were tested consistently scored well above the national norm for the same tests. The first nationwide study of academic achievement among home schooled students was conducted by Ray (1990) and involved 1,471 students. The data collected on all grade levels (K-12) showed that the home schooled students scored at or above the 80th percentile on all subtests, again well above the national average. As Taylor (1992) claims, "There is yet to be found any study which suggests that, as a group, home schoolers perform below average on any kind of academic measure" (p. 25).

However, very little research has investigated the results of home education by examining its product: the adult who has been home schooled. What happens to these students after they

complete the home school experience? Can they succeed in the post-secondary academic environment away from their parents and in a more traditional educational setting?

Ray (1990) included a survey of home schooled adults in his nationwide study mentioned earlier. Of the 99 subjects who responded to his survey regarding post-high school activities, 50.5% reported that they had attended either a junior college or a four-year college after completing their high school requirements. These results substantiate Toch's (1991) claim that approximately 50% of students who have been home schooled go on to attempt college-level academic work.

Barnebey (1986) investigated university admission requirements for home schooled applicants and found that different schools had varying expectations of home schooled students "with Private universities being more likely to accept home schooled applicants than the Public universities" (p. 142). Interestingly, the survey uncovered varying attitudes among the admissions officers regarding the potential for success of the home schooled applicants. Of the admissions officers from non-accepting universities, 70.4% believed home schooled students would be less successful than conventionally educated students and that 73% advised home schooled applicants to attend a junior college or community college before attempting university-level work. Obviously then, there is some doubt in the minds of some educators that home schooled students can compete on this advanced academic level.

Two recent studies have included college students who have been home schooled. Oliveira (1994) investigated the differences in critical thinking skills among college freshmen who had graduated from different types of high schools, including home schools, conventional Christian schools, public schools, and Accelerated Christian Education (ACE) schools. He found no significant differences among these groups on any of the measures of these skills. Mexcur (1993) compared the college-level academic achievement of freshman college students who had graduated from public schools, conventional Christian schools, Accelerated Christian Education (ACE) schools, and home schools. Comparing ACT scores, final semester grades for two freshman level English courses, and both the first and second semester grade point averages, Mexcur concluded that "graduates of all types of high schools achieve at very similar academic levels" (p. 110). However, because his study used only 10 students who had been home schooled, the results contribute little to the body of research on this topic.

Therefore, existing literature in this field reveals that the investigation of home schooled adults' potential for academic success in college is a legitimate area of inquiry Thus, the purpose of this study was to determine differences in academic preparedness as well as academic achievement among college students who had attended home schools, public schools, and conventional private schools.

Subjects

The subjects of this study included 180 first-time freshman students enrolled during the 1992-93 and 1993-94 academic years at a large, private Christian university located in the Southeast. These students were divided into three groups based on the type of high school they had attended: (a) home school graduates (N=60), (b) public school graduates (N=60), and (c) conventional private school graduates (N=60). The home school group consisted of all of the available freshman students who had completed their entire high school education in a home school and who had taken the English course that was the focus of the study. The other two groups resulted from a random sample selected from the available population of freshman students who had completed all of their high school education in either a public school or a conventional private school and who had taken the English course required for this study. Chi-square analyses were used to determine that the groups did not differ significantly (at an alpha level of .01) on any of the selected demographic variables (age, race, gender, geographical region).

Instrumentation

Data for this study was collected from the academic records for both the 1992-93 and 1993-94 academic years at the university that was the site for this study and from freshman English classes in the same academic years.

The aptitude for college level English was measured by the American College Testing Program (ACT). Administered to the

majority of college-bound juniors and seniors in 38 states, it is the more popular of the two major college entrance examinations offered nationally (Brasel, 1991). The ACT "measures educational development in English, mathematics, reading, and science reasoning. Scores for each of the four subtests are reported, as well as a composite score" (p. 5), the mathematical average of the four subtests (Brasel, 1991). The complete ACT assessment program is constructed "to measure as directly as possible [the] mastery of knowledge and skills required for success in college studies" (ACT Assessment User Handbook, 1991, p. 4). This study used the scores from the English subtest and the composite scores for all four subtests. Several studies have shown the ACT composite score to be a reliable predictor of first year college student grade point averages (Dvorak, 1989; Schade, 1977; Thornell & Jones, 1986; Snyder & Elmore, 1983; Nelson, 1985) and the subscores for the specific tests to be valuable in predicting specific course performance (Schade, 1977; Bauer, 1987; Goldman & Slaughter, 1976).

The specific English course chosen as the focus of this study was a required course for all of the students in the study. Entitled Composition and Rhetoric, it is an introduction to academic writing emphasizing argumentation, research, documentation, and style, centering on the library paper. The course emphasizes skills that are intended to enable students to communicate effectively in their college work beyond this specific English course. The course is also representative of

most college courses in that it is conducted in a lecture format, a potential area of concern for the home educated student who has depended on individualized instruction rather than a structured educational situation in which he, along with scores of other students, must listen to an oral presentation of material, take notes, and assimilate information over which he will be tested at a later date. It is also within this structured situation that he must develop the skills necessary to succeed in this course and in his other college-level courses.

The instruments used to measure academic achievement in this study consisted of measures of composition skills and usage skills mastered in this required English course. The composition skills were measured by the grade earned on the major writing assignment for this course (the second draft of a library research paper) and the number of correct responses to multiple choice items that deal with principles of composition taken from the quizzes, tests, and final exam of the course (a total of 162 multiple choice items). The usage skills were measured by the number of correct responses to multiple choice items that test knowledge of vocabulary taken from the quizzes, tests, and final exam (a total of 144 items) and the number of correct responses to multiple choice items that test knowledge of grammatical principles taken from the quizzes, tests, and final exam (a total of 64 items).

Research Design and Statistical Analysis

The independent variables for this study were the prior high school setting in which the subject was educated (either home school, conventional private school, or public school). The dependent variables were the norm-referenced test scores reflecting aptitude for a college-level English course (specifically the relevant ACT test scores) and the criterion-referenced scores reflecting achievement in skills necessary for success in a college-level English course (specifically the library research paper as well as the quiz and test scores reflecting composition and usage skills). Because of similarities among the dependent variables, they were divided into three meaningful sets: (1) the measures reflecting aptitude for college English: the ACT English subtest scores and the ACT Composite test scores; (2) the measures reflecting achievement in composition skills: the grades on the library research paper and the scores on test items that measure knowledge of composition principles; and (3) the measures reflecting achievement in usage skills: the scores on test items that measure vocabulary skills and the scores on test items that measure grammar skills.

The purpose of this study was to determine the differences in aptitude for and achievement in college English among home school graduates, conventional private school graduates, and public schools graduates. Specifically, this study addressed the following questions:

1. Do the groups of college freshmen differ significantly on the variables dealing with aptitude for college English?
2. Do the groups of college freshmen differ significantly on the variables dealing with composition skills learned in a college level English course?
3. Do the groups of college freshmen differ significantly on the variables dealing with usage skills learned in a college level English course?

Results and Findings

Because this research design studied the effects of three independent variables on six dependent variables that were clustered into three sets, the multivariate analysis of variance (MANOVA) was deemed an appropriate statistical test for this study. Three separate MANOVA tests were run to reflect the three sets of dependent variables: (1) one MANOVA analyzed the relationships of the ACT English subtest scores and the ACT composite test scores on the three independent variables; (2) a second MANOVA analyzed the relationships of the research paper grades and test items reflecting composition skills on the three independent variables; and (3) a third MANOVA analyzed the relationships of the test scores reflecting vocabulary and grammar skills on the three independent variables. A .05 alpha level of significance was used.

Resulting Wilks' Lambdas were followed with univariate statistics to determine which specific dependent variables the

groups of freshman students differed on. The Tukey HSD Multiple Comparison test was used to determine which groups differed on the particular dependent variable. The statistical program SYSTAT (Wilkinson, 1989) was used for all computations and analysis of data.

Research Question One

Table 1 lists the means and standard deviations of the ACT English subscore and the ACT composite score for the three groups of college freshman students. The MANOVA revealed a significant difference among the groups of freshmen in their mean scores reflecting aptitude for college English (Wilks' Lambda .88. df 4, 352, p=.02). Follow-up univariate tests showed that only one of the two variables (ACT English subtest score and ACT composite score) had a significant F, which was the ACT English subtest score (F 4.22, df 2, 177, p=.02). The univariate tests were followed by a Tukey HSD Multiple Comparison, which revealed that the significant difference on the ACT English subtest variable existed between the home school graduates and the conventional private school graduates. The home schooled students (X=24.73) scored significantly higher than the private school students (X=22.43) on the ACT English subtest.

Research Question Two

Table 1 lists the means and standard deviations of the scores on the library research paper and the test scores

Table 1

Means and Standard Deviations of the Scores Measuring Aptitude for and Achievement in a College-Level English Course for College Freshmen Grouped by High School Educational Setting

	Freshman College Students					
	Home School Graduates (N=60)		Public School Graduates (N=60)		Conventional Private School Graduates (N=60)	
	M	SD	M	SD	M	SD
ACT English Subtest Score	24.73	.58	23.02	.58	22.43	.58
ACT Composite Score	23.02	.51	23.20	.51	22.03	.51
Library Research Paper	48.83	.65	48.40	.65	48.32	.65
Writing Principles	115.27	2.07	115.02	2.07	114.23	2.07
Vocabulary Skills	112.13	1.86	112.03	1.86	113.50	1.86
Grammar Skills	47.40	.98	47.03	.98	46.50	.98

reflecting writing principles for the three groups of freshman college students. The MANOVA revealed no significant difference among the groups of freshmen in their mean scores on the library research paper or the test items reflecting writing principles.

Research Question Three

Table 1 lists the means and standard deviations of the scores on test items reflecting vocabulary skills and grammar skills for the three groups of college freshman students. The MANOVA revealed no significant difference among the groups of freshman students in their mean scores on test items reflecting vocabulary skills and grammar skills.

Discussion of Findings

The purpose of this study was to determine the differences in academic aptitude for and achievement in a college-level English course among home school graduates, public school graduates, and conventional private school graduates. Based on the results of this investigation, one may conclude that home schooled students demonstrate similar academic preparedness for college and similar academic achievement in college as students who have attended conventional schools.

Aptitude for College-level English

The statistical analysis revealed that the home schooled students' ACT composite scores were comparable with the scores of the other groups of students; however, the home schooled students scored significantly higher on the ACT English subtest than did the conventional private school graduates. These findings are

consistent with the existing research involving the performance of home schooled students on standardized tests taken before they reach college-level study. Almost without exception, home schooled students in both elementary and secondary levels perform as well as, if not better than, their conventionally educated counterparts in both statewide and national comparisons.

In light of the research that identifies the predictive value of the ACT test, these home schooled students seem to demonstrate an aptitude for success in college, specifically in college-level English. Schade (1977), Snyder and Elmore (1983), and Thornell and Jones (1986) all concluded from their studies the value of the ACT subtest scores and the ACT composite score in predicting academic achievement in college. Although the ACT scores may not be helpful in predicting success in specific courses, they do seem to serve as a predictor of general academic achievement. Therefore, this study suggests that home schooled students are as likely as conventionally educated students to succeed academically in college-level work. In fact, their ACT scores reveal that these home schooled students may be more likely to succeed than the students who had graduated from conventional private schools.

Achievement in Writing Skills

The second MANOVA revealed no significant difference among the groups of students in their mean scores on the library research paper or the quiz and test items reflecting comprehension of writing principles. Even though the results

were not significant, the groups differed in their mean scores on writing variables: (1) the library research paper: home school graduates, X=48.83; public school graduates, X=48.40; conventional private school graduates, X=48.32; (2) the test items reflecting writing principles: home school graduates, X=115.27; public school graduates, X=115.02; conventional private school graduates, X=114.23.

These findings indicate that the home schooled students in this study demonstrate similar abilities in writing skills on the college level as conventionally educated students. In fact, their mean performances on these measures were numerically higher than the other groups although not to a significant level. Because writing skills are foundational to success in most college courses, it is likely then, that these home schooled students are just as capable as conventionally educated students to succeed in that aspect of their college courses.

Achievement in Usage Skills

The third MANOVA revealed no significant difference among the groups of students in their mean scores on the quiz and test items reflecting vocabulary and grammar skills. Although not significant, the groups differed in their mean scores across usage variables: (1) the test items reflecting vocabulary skills: home school graduates, X=112.13; public school graduates, X=112.03; conventional private school graduates, X=113.50; (2) the test items reflecting grammar skills: home

school graduates, X=47.40; public school graduates, X=47.03; conventional private school graduates, X=46.50.

These findings demonstrate a similar command of the English language among these home schooled students and conventionally educated students. Foundational not only to writing skills but also to speaking and reading skills, the verbal acuity reflected by a command of academic vocabulary and correct grammar is undoubtedly instrumental in a student's success in college. This study reveals that these home schooled students are just as capable as conventionally educated students to achieve the verbal skills necessary to perform well in college. In addition, the results of the students' performances in this particular course demonstrate similar levels of academic achievement on the measures selected to determine success in the course: namely, papers, quizzes, and tests. The home schooled students performed as well as, if not better than, their conventionally educated counterparts.

Conclusion

Home education has become in recent years an educational alternative for many families in a variety of circumstances. As a relatively new, yet significant, force in modern education, home schools have attracted the attention of educators, legislators, and even the general public. Not all of this attention, however, has been in admiration of the accomplishments of home educators. Many doubt, and even contest, the legitimacy of this educational alternative.

Research in the field of academic achievement, however, supports the home schoolers' claim that their strategy is working. Lines (1986) summarizes this research by reminding educators that "high test scores provide no evidence that all children would benefit from the experience of home instruction . . . . The test data are evidence only that, in general, children in home-schools are having successful experiences" (p. 11). Certainly, home schooling is not appropriate, nor possible, for all students.

Yet, based on the results of this investigation, one may conclude that the home schooled students in this study demonstrate similar academic preparedness for college and similar academic achievement in college as the students who have attended conventional schools. These findings are consistent with the existing research that reveals that home schooled students perform as well as, if not better than, conventionally educated students on academic achievement measures on the elementary and secondary levels. It seems that home schooled students can continue to perform adequately in the different, and more advanced, academic setting of college-level study.

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